REMARKS

The Office Action mailed June 30, 2003 has been reviewed and carefully considered. Claims 3-5, 7-8, 10, 11, 13-16, 19-20 and 25 have been amended. Claim 23 has been cancelled, without prejudice. Claims 26 and 27 have been added. The subject matter was previously provided in claims 10 and 22. No new matter has been added. Claims 3-22, 24 and 27 remain pending in this application, with claims 3 and 14 being the only independent claims. Claims 7, 8, 13, 15, 19, 20 and 25 have been amended to correct a spelling error.

Reconsideration of the above-identified application, as amended, and in view of the following remarks is respectfully requested.

In the present office action, the Examiner rejects claims 3-6, 8, 9-11, 13-18, 20, 21-23 and 25 under 35 U.S.C. 102(b) as being anticipated by Aslund et al.

Further, the Examiner rejects claims 7, 12, 19, and 24 under 35 U.S.C. 103(a) as being obvious over Aslund.

On a preliminary note, applicants submit that a certified copy of the Priority Document has been requested but, as of today, is not available. Upon receipt, such document will be forwarded to the Examiner.

Before applicants discuss the rejections, a brief summary of the claimed invention is provided. For an object that is being examined, a method for detecting the multi-fluorescence of fluorophores is provided. The detection of multi-fluorescence takes place in a sub-nanosecond to millisecond time range. This is possible in that the excitation wave lengths for the individual fluorophores is delayed through an optical delay in the range of sub-nanoseconds to some milliseconds, so that one is able to excite and detect the fluorescences one after the other.

Accordingly, this method is a virtually simultaneous multi-fluorescence detection, but not really simultaneous method as provided by Aslund. The excitations in the present invention are performed one after the other in the sub-nanosecond to millisecond range. This short time scale allows an instant measurement, but from the true technical point, it is not simultaneous.

However, it should be pointed out that the measurement provided for by the invention is much quicker than the usual non-simultaneous detection methods.

As is disclosed on page 6 of the specification, an impulse laser 1 is used as an excitation source. The emitted beam is, for example, split up by way of semi-permeable mirrors 2 and conducted to *n* coloring material lasers 3. By way of an optical delay 4, such as glass fibers, the excitation beam is delayed in such a way that only one fluorescence coloring material contained in the sample is always excited near its absorption maximum. Because of the delay, it must be ensured that the individual fluorescence coloring material is thoroughly decayed up to the next excitation process. This presupposes knowledge of the life duration of the fluorescence coloring materials to be verified.

In contrast to the disclosure of Aslund, the present invention discloses a method for multi-fluorescence detection, where the fluorescences are excited one after the other (see, for example, page 4 of the specification) and not simultaneously as disclosed in Aslund. This provides a profound difference. In the present invention the measurement may be described as being virtually simultaneously because the time-scale between the separate excitations and therefore the time scale of the measurement ranges from sub-nanoseconds to milliseconds, i.e. an instant measurement from the user point of view. However, from the technical point of view the excitations in the two inventions are very much different. Aslund describes a separate simultaneous excitations, whereas the present invention ensures that an excitation is delayed before the next excitation takes place. This results in higher measurement sensitivity. Moreover, Aslund utilizes periodically modulated beams; the present invention is based on impulse-like excitations. Furthermore, with respect to the costs of the apparatus, the coloring material laser sources of the present invention are preferable over laser sources with phase modulation as being indispensable for Aslund.

In addition, there is also a difference concerning the detection of the excitation. Aslund describes lock-in amplifiers in order to collect the detected signals separate from one another along a timing axis. The present invention utilizes electronic gates. Lock-in amplifiers would not be able to measure the disclosed separate fluorescence signals of the present invention.

Whereas the present invention includes all advantages of non-simultaneous detection methods with respect to the sensitivity of the measurement in contrast to simultaneous excitations, it is also covers the advantages of a simultaneous measurement system with respect to the measurement time due to its short time range between sub-nanoseconds up to milliseconds.

No microscopic or macroscopic probe would be able to experience any relevant shift in location within the short time frame of the multi-fluorescence detection. Therefore, although being not precisely simultaneous, the present invention provides a method for a detection carried out on dead as well as living tissue. The short time frame is achieved by taking advantage of the known life durations of the individual fluorescence coloring materials. The delays between the different excitations are being fixed in such a manner that they correspond to these life durations. Therefore no time is wasted between the different excitations and an instant measurement is ensured.

In order to more clearly distinguish over Aslund's "precisely simultaneous measurement" and "virtually simultaneous excitations" of the present invention, the independent claims were amended accordingly.

For the foregoing reasons applicants submit that independent claims 3 and 14 are patentable. Claims 4-13 depend from independent claim 3 and claims 15-22 and 24-25 depend from independent claim 14 and, thus, are patentable for the same reasons that claims 3 and 14 are patentable. Applicants submit that the application is now in condition for allowance and passage to issuance is requested.

If any additional fees or charges are required at this time in connection with the application, authorization is hereby given to charge our Patent and Trademark Office Deposit Account No. 14-1263.

Respectfully submitted,

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